

## Appendix B

# The Economic Impact of Willow Run Airport 2007



DETROIT METRO • WILLOW RUN  
WAYNE COUNTY AIRPORT AUTHORITY

**M** UNIVERSITY OF MICHIGAN-DEARBORN  
SCHOOL OF MANAGEMENT

iLABS

# *WILLOW RUN AIRPORT*

## *2007 ECONOMIC IMPACT STUDY*



### **Wayne County Airport Authority Board**

Michael M. Glusac, Chairperson

Wayne S. Doran

James B. Nicholson

Bernard F. Parker, Jr.

James Settles, Jr.

David L. Treadwell

Charlie J. Williams

Lester W. Robinson, Chief Executive Officer



iLABS

Lee Redding, Project Director

## Table of Contents

|  |          |
|--|----------|
| <b>Executive Summary .....</b>                             | <b>3</b> |
| Section I. Assessing Economic Impact of Willow Run .....   | 7        |
| I.A Transportation for High-Value Output .....             | 7        |
| I.B The Scope of Economic Impact Analysis .....            | 9        |
| I.C Quantifying Economic Impact.....                       | 10       |
| Section II. Economic Impact of Air Transportation .....    | 12       |
| Section III. Economic Impact of Visitors .....             | 15       |
| Section IV. Economic Impact of Education.....              | 17       |
| Section V. Economic Impact of Expansion .....              | 18       |
| V.A Capital Improvement Program.....                       | 18       |
| Appendix A. Sources.....                                   | 20       |
| Appendix B. Quantifying Economic Impact: Methodology ..... | 22       |
| Appendix C. Capital Improvement Plan Components .....      | 24       |
| C.i Classification of Components .....                     | 24       |
| C.ii Capital Improvement Plan Details .....                | 26       |
| C.iii Wayne Economic Impact.....                           | 28       |
| C.iv Michigan Economic Impact.....                         | 30       |

### **Executive Summary**

Willow Run Airport provides Wayne County and the State of Michigan with both cargo shipments and passenger services. The airport represents an important piece of the economic infrastructure of Michigan with the potential to have an even greater impact in the future. The airport's economic impact of over \$200 million in 2006 supported over 2,000 jobs in the State of Michigan and incomes of \$63 million. Within Wayne County, earnings of \$22 million and 710 jobs were part of an overall economic impact of over \$100 million.

The economic impact of Willow Run airport occurs mostly through the transportation services Willow Run provides and the visitors that arrive on the passenger flights into Willow Run. The expansion of the facility provides additional immediate economic impact from construction expenditures while increasing the value of the infrastructure represented by Willow Run.

While an economic impact report quantifies the measurable direct effect of Willow Run Airport, the airport's most crucial value to the region lies in its ability to attract future businesses that produce high-value products that must be shipped by air. Air cargo represents a growing portion of the freight transportation industry. Further, goods transported by air are disproportionately high-value items and ones in which American business excels. A strong air cargo link is important to a successful economic development strategy. The billions of dollars in cargo which go through Willow Run each year already support many local businesses and jobs; further growth at Willow Run means further growth for Michigan's businesses.

A substantial fraction of Willow Run's passenger traffic is associated with Pfizer. The airport's measured economic impact will therefore likely drop in the coming year as Pfizer closes its area facilities. However, such challenges only reinforce the necessity of

## Executive Summary

having the transportation infrastructure necessary to create and attract profitable business opportunities.

This economic impact report benefited from the contributions of the following people:

|                        |   |
|------------------------|---|
| Stephen T. Economy     | Senior Vice President, Administration, WCAA     |
| Sean Brosnan           | Director, Willow Run Airport                    |
| Rick Taig              | Airport Operations/Security Manager, Willow Run |
| Mary Mullally          | Executive Assistant to Steve Economy            |
| Marsha Smith           | Airport Operations, Willow Run                  |
| Magali Valero, PhD     | Assistant Professor of Finance, UM – Dearborn   |
| Vivek Sharma, PhD      | Assistant Professor of Finance, UM – Dearborn   |
| Anne-Louise Statt, PhD | Lecturer in Business Economics, UM – Dearborn   |

The cover was designed by Marc Williams using photographs provided by the Willow Run Airport Operations/Security Unit.

IMPACT OF WILLOW RUN AIRPORT  
ON THE ECONOMY OF WAYNE COUNTY  
Summary Table

| Type of Impact     | Direct Spending (millions) | Economic Impact (millions) | Earnings Impact (millions) | Jobs Impact |
|--------------------|----------------------------|----------------------------|----------------------------|-------------|
| Air Transportation | \$29.6                     | \$50.7                     | \$9.4                      | 206         |
| Visitors           | \$22.1                     | \$34.3                     | \$8.1                      | 388         |
| Education          | \$0.4                      | \$0.8                      | \$0.2                      | 8           |
| Expansion          | \$13.7                     | \$22.8                     | \$4.5                      | 108         |
| <b>TOTAL</b>       | <b>\$65.8</b>              | <b>\$108.6</b>             | <b>\$22.2</b>              | <b>710</b>  |

IMPACT OF WILLOW RUN AIRPORT  
ON THE ECONOMY OF THE STATE OF MICHIGAN  
Summary Table

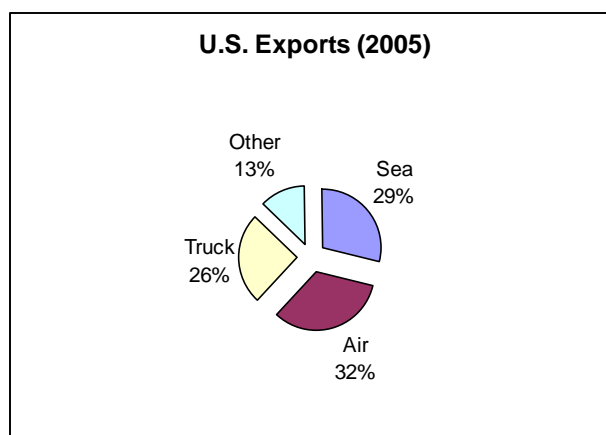
| Type of Impact     | Direct Spending (millions) | Economic Impact (millions) | Earnings Impact (millions) | Jobs Impact  |
|--------------------|----------------------------|----------------------------|----------------------------|--------------|
| Air Transportation | \$29.6                     | \$55.9                     | \$13.9                     | 321          |
| Visitors           | \$65.7                     | \$126.0                    | \$38.9                     | 1,687        |
| Education          | \$0.9                      | \$2.0                      | \$0.7                      | 27           |
| Expansion          | \$13.7                     | \$30.2                     | \$9.6                      | 234          |
| <b>TOTAL</b>       | <b>\$109.9</b>             | <b>\$214.1</b>             | <b>\$63.1</b>              | <b>2,269</b> |

## Section I. Assessing Economic Impact of Willow Run

### *I.A Transportation for High-Value Output*

Air cargo is a primary means by which the region and the United States ship high value output. According to Bureau of Transportation Statistics data, in 2002, shipments by air were valued at approximately \$77,800 per ton in 2000 dollars. This value is over 120 times the comparable figure for truck transportation. Using this estimate and the 2006 cargo volume, Willow Run is currently handling over \$4 billion worth of cargo annually.

High technology countries like the United States have a comparative advantage in producing the sorts of high value goods that are shipped by air. In a global economy, therefore, being able to transport these high value goods is vital to American exports. While most imports to the United States arrive by sea, air cargo has expanded to the point where it is now the most important means (by dollar value) of shipping exports. In 2005, goods produced in America and exported by air were valued at \$293 billion. As the chart below shows, this amounts to about one-third of the dollar value of American exports.



In short, air cargo is emerging as a key link to supporting American job creation by providing vital infrastructure for the high-value products that American business excels



## Assessing Economic Impact

at. The people of Southeast Michigan have the opportunity to capitalize on the airports of Wayne County. A previous study, *A Strategic Vision and Planning Guidelines for Willow Run Airport*, shows how Willow Run Airport provides the opportunity to form the western anchor of an Aerotropolis from Willow Run to Detroit Metro. The present study explores the impact it is already having on the region.

### *I.B The Scope of Economic Impact Analysis*

An airport economic impact report measures the quantifiable effects of activities directly associated with the airport. As discussed above, an airport is a critical part of the infrastructure for an economy. The scope of an economic impact report is limited to the activities immediately identifiable with the transportation of people and goods which occurs at an airport.

In this sense, Willow Run has several immediately identifiable economic activities which have impacts on the region. First, the **economic impact of air transportation** represents the services of transporting goods and passengers. Second, the **economic impact of visitors** derives from people who arrive in Southeast Michigan and spend money on things like hotels and entertainment while here. Third, the **economic impact of education** occurs when Willow Run facilities are used to provide services such as the flight school run by the Eagle Flight Center and Eastern Michigan University. Fourth, to capture the economic potential from the assets of the Wayne County Airport Authority, money is being invested in enhancing Willow Run Airport. While the most important effect of this will be the long-run increase in economic infrastructure, the **economic impact of expansion** includes the construction activities themselves.

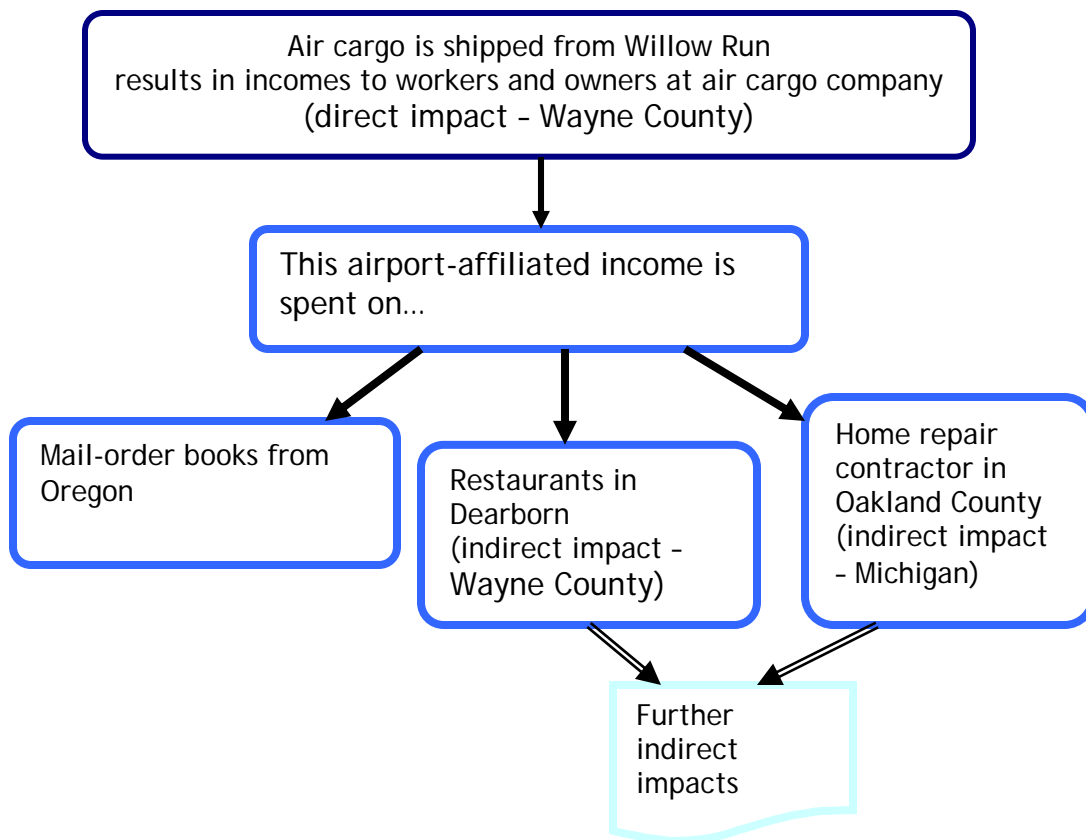
In each of these four fields, the airport's impact of the economy of a region can be measured in three ways. First, the overall **economic impact (also known as “demand impact”)** measures the demand for goods and services that is associated with the presence of the airport. Some of this demand for goods and services will be satisfied by goods arriving from other regions and countries, and some will be met locally. To the extent that the demand is met locally, this economic impact will include an **earnings impact**: wages and other incomes earned by local residents. This earnings impact is measured in dollars. The **jobs impact** of an airport is this earnings impact measured in terms of the number of workers whose employment relies on airport-related activity.

### *I.C Quantifying Economic Impact*

Economic impact (whether in terms of demand, earnings, or jobs) depends on the amount of money spent, the type of activity on which it is spent, and the area over which the economic impact is being measured. The type of activity matters because it determines whether the demand is likely to be met locally. Similarly, measuring economic impact over a broader area will increase the measured impact since more of the economic activity will fall within the designated area.

Once the geographic area has been chosen, estimated “multipliers” can be calculated by the Regional Input-Output Measuring Study conducted by the United States Department of Commerce. These determine for each industry what the effect of \$1 million in spending will be on economic activity, incomes, and employment. Further details on the use of these multipliers are provided in the appendix to this report.

These multipliers will incorporate both the direct and indirect impact of \$1 million in spending. Indirect impact refers to the impact of incomes being re-spent within the region. For example, if \$1 million is spent on shipping cargo at Willow Run, much of this \$1 million will accrue as incomes to local residents. When they spend some of their income on other local goods and services, this second-round spending is the beginning of indirect impact. This is illustrated in the diagram on the next page. Note that the diagram is a somewhat simplified view of the actual geographical distribution of economic impact. Some of the incomes of each business will actually accrue to workers and owners in a different county or state than the place where the business is located.



**An illustration of direct and indirect economic impact**

## Section II. Economic Impact of Air Transportation

|                                  |                      |
|----------------------------------|----------------------|
| Passenger Departures             | 210,500              |
| Estimated Passenger Revenue      | \$15.8 million       |
| Gross Air Cargo                  | 316.5 million pounds |
| Estimated Net Air Cargo          | 95.0 million pounds  |
| Estimated Air Cargo Revenue      | \$13.8 million       |
| Total Air Transportation Revenue | \$29.6 million       |

|                 | Wayne   | Michigan |
|-----------------|---------|----------|
| Economic Impact | \$50.7M | \$55.9M  |
| Earnings Impact | \$9.4M  | \$13.9M  |
| Jobs Impact     | 206     | 321      |

Willow Run Airport has both charter and cargo flights. Each provides measurable economic impact to the region in terms of the transportation services provided, and each is an important part of the transportation infrastructure of the region.

210,500 passengers arrived at Willow Run Airport in calendar year 2006. The total cost of this transportation can be estimated by determining the total miles flown and the cost per mile flown. U.S. Department of Transportation T-100 data can be used to determine the length of an average flight. While the T-100 data does not contain all flights from Willow Run due to the more relaxed reporting requirements for charter flights, an average of the recorded flights provides an estimate of 379 miles for the average flight departing Willow Run in the 12 months ending in June 2006. With 210,500 annual passengers, this represents 79.8 million revenue passenger miles. The average revenue per passenger mile for regional airlines has been reported by the Bureau of Transportation Statistics as 19.8 cents. This gives an aggregate cost of \$15.8 million for the flights departing Willow Run. Since charter travel is more expensive than most

## Impact of Transportation

regional travel, this number represents a conservative estimate of the cost of current charter travel. The departure of Pfizer, however, reflects a large counteracting risk to future charter traffic, as 65% of the arriving passengers are currently associated with Pfizer.

Cargo tonnage is highly volatile from year to year. According to FAA data, 434.8 million pounds were enplaned at Willow Run in calendar year 2003, 499.7 million pounds in 2004, 341.1 million pounds in 2005, and 316.5 million pounds in calendar year 2006. These numbers represent the maximum gross weight of all loaded aircraft arriving at Willow Run. Unfortunately, the fraction of gross weight that is actually used to transport cargo is no longer required to be reported. To estimate the net weight of the cargo, then, information about the types of planes arriving at Willow Run has been used. For the aircraft (such as the DC-8 and DC-9) which comprise most of the cargo landings at Willow Run, approximately 30% of the gross weight of the airplane is available for cargo. In this study, the 2006 numbers for gross weight are used and a 30% multiplier is used to convert gross weight to net cargo transported. Applying this to the 2006 figure of 316.5 million pounds of gross cargo gives an estimate of 95.0 million pounds of net cargo. On an ongoing basis, the actual number may be somewhat higher (if the drop in 2006 proves temporary) or lower (if the 30% multiplier too high).

Similarly to the passenger traffic, T-100 data can provide an estimate (based on those cargo flights reporting) of the average distance of cargo shipments. The T-100 data for the year ended June 2006 gives the average distance of a cargo flight as 680 miles for reported cargo flights. Applying this estimate to 95.0 million pounds of cargo gives 32.3 million revenue ton miles of cargo associated with Willow Run departures. Revenue received per ton mile (the “cargo yield”) can generally be obtained from the annual reports of publicly owned companies. However, the large carriers at Willow Run are privately owned. This study therefore uses the cargo yield of Northwest Airlines, the leading airline at nearby Detroit Metropolitan airport, to estimate the cost of air cargo in the area. Northwest reported that air cargo generated 42.8 cents per revenue ton mile in

## Impact of Transportation

2006. This value is typical of other large airlines. For example, Continental's yield in 2006 was 42.5 cents per revenue ton mile, with American's a few cents lower. This cargo yield multiplied by the number of revenue ton miles gives an estimated value of cargo shipments departing Willow Run of \$13.8 million.

Total spending on air transportation at Willow Run is therefore \$29.6 million, all occurring in Wayne County. Including indirect effects, this spending will have an economic impact to the state of \$55.9 million, of which approximately 90% accrues to Wayne County. This economic impact supports \$13.9 million in incomes and 321 jobs in the state, of which incomes of \$9.4 million and 206 jobs accrue to Wayne County.

### Section III. Economic Impact of Visitors

|                 | Wayne   | Michigan |
|-----------------|---------|----------|
| Visitors        | 35,100  | 104,500  |
| Spending        | \$22.1M | \$65.7M  |
| Economic Impact | \$34.3M | \$126.0M |
| Earnings Impact | \$8.1M  | \$38.9M  |
| Jobs Impact     | 388     | 1,687    |

Approximately 210,500 passengers arrive at Willow Run each year. Those who are visiting the area create economic impact by their spending while in the county and state. To estimate their economic impact, we presume that the visitors have spending patterns similar to those identified for business visitors in *The Economic Impact of the Detroit Metropolitan Wayne County Airport 2006*. This study, based on a passenger survey, found that business visitors spend an average of \$629 locally during their visit.

The 210,500 visitors come primarily on flights run by Pfizer (65%) and Johnson Controls (32%). Each company has operations spread across the country. To determine the fraction of passengers who are visiting Michigan, as distinct from returning residents, the study presumes that half of Pfizer and Johnson Controls passengers are visiting Michigan while the other passengers have the same fraction of visitors as that found in the Detroit economic impact study mentioned above. Further, the number visiting Wayne County is estimated as the Johnson Controls passengers plus a fraction of the other (non-Pfizer) employees equivalent to that identified in the Detroit study. Together, this produces an estimate that the 210,500 visitors consist of 106,000 returning residents, 35,100 visitors to Wayne County, and 69,400 visitors elsewhere in Michigan.

Combining these amounts for passenger counts and spending per visitor gives an estimated spending of \$22.1 million in Wayne County and \$65.7 million across the state. Since \$1 million in visitor-related industry earnings supports a large number of jobs, the



## Impact of Visitors

\$126 million in economic impact for the state includes \$39 million in earnings and 1,687 jobs. Approximately one quarter of these impacts occur within Wayne County, as shown in the above table.

Clearly, this visitor impact is likely to fall over the intermediate term due to the closing of Pfizer's Ann Arbor facilities. Pfizer is currently responsible for approximately 68,000 of the arriving passengers. The availability of a strong transportation infrastructure is a critical part of a strategy to recover from this loss.

## Section IV. Economic Impact of Education

|                 | Wayne  | Michigan |
|-----------------|--------|----------|
| Economic Impact | \$0.8M | \$2.0M   |
| Earnings Impact | \$0.2M | \$0.7M   |
| Jobs Impact     | 8      | 27       |

Willow Run Airport provides support not only to the Yankee Air Museum, but also provides the base for education of new pilots through a program run by the Eagle Flight Center and Eastern Michigan University. The four-year Bachelor of Science degree program in Aviation Flight Technology started in 2002, and has grown to 104 students as of Fall 2005. Michigan's Office of the Auditor General reports Eastern Michigan's spending per student in 2005-2006 was \$8,721. This means that 104 students represent education spending of approximately \$907,000. Allocating this amongst counties is difficult as Eastern Michigan's campus is in Washtenaw while the airport is part of the Wayne County Airport Authority, so the estimates for Wayne County impact lack some precision.

The table above shows the current economic impact of spending this \$907,000 on education. Of course, the major economic impact of these trained pilots and other skilled airline workers will accrue in future years as these people begin to earn and spend money in the local economy.

## Section V. Economic Impact of Expansion

### *Capital Improvement Program*

|  |                 |
|--|-----------------|
| Willow Run's Capital Improvement Program (CIP) | \$83.3 million  |
| Total Economic Impact for Wayne County         | \$141.7 million |
| Total Earnings Impact for Wayne County         | \$28.5 million  |
| Total Economic Impact for Michigan             | \$189.2 million |
| Total Earnings Impact for Michigan             | \$60.5 million  |

| Fiscal Year 2007 | Wayne   | Michigan |
|------------------|---------|----------|
| Economic impact  | \$22.8M | \$30.2M  |
| Earnings impact  | \$4.5M  | \$9.6M   |
| Jobs impact      | 108     | 234      |

The Wayne County Airport Authority has a five year Capital Improvement Plan for enhancing the value of Willow Run and Detroit Metropolitan Airport. The current plan, focusing on Fiscal Years 2007 through 2011, includes \$83 million in spending for Willow Run airport. Included in this is about \$14 million in spending in Fiscal Year 2007, which runs from October 1, 2006 through September 30, 2007.

The impact shown above is measured both for the entire \$83 million plan and for the portion of the plan occurring in Fiscal Year 2007. Because a large portion of this plan is devoted to expanding the airport's facilities rather than simply routine maintenance of the existing capabilities, this economic impact is added as a separate line item and added to the economic impact from other sources. The impact naturally varies from year to year

## Impact of Expansion

over the five year course of the Plan, but the average jobs impact for the five years is approximately the same as that shown for Fiscal Year 2007 in the table above.

Computing economic impact involves taking each of the 30 components of the plan and classifying them by industry and timing. Details of these calculations are provided in the appendix.

### Appendix A. Sources

This economic impact report is a companion piece to a report covering Detroit Metropolitan Wayne County Airport (DTW). DTW is the largest airport in Michigan and the other airport administered by the Wayne County Airport Authority. *The Economic Impact of Detroit Metropolitan Wayne County Airport* can be found at [http://metroairport.com/pdf/DTW\\_Economic\\_Impact\\_Report.pdf](http://metroairport.com/pdf/DTW_Economic_Impact_Report.pdf). This report included a survey of visitors which provided some spending estimates used in the present study. Data on the spending habits of visitors to the Metro Detroit area is also available at <http://www.visitdetroit.com/visitorcenter/aboutdetroit/statistics/>, the website of the Detroit Metro Convention & Visitors Bureau.

Many other airports have economic impact reports online which use methodologies similar to that used here. These include a 2004 study of the Minneapolis/St. Paul International airport which can be downloaded from [http://www.mspairport.com/msp/docs/misc/mspimp04\\_FINAL.pdf](http://www.mspairport.com/msp/docs/misc/mspimp04_FINAL.pdf) and a 2005 report on the Memphis International Airport at <http://www.memphisairport.org/EcImpactFinal.pdf>.

Financial information including the Fiscal Year 2007 Budget of the Wayne County Airport Administration can be found at <http://metroairport.com/about/finance.asp>. This budget includes information about the 2007-2011 Capital Improvement Plan.

Information on the education impact was taken from the Eastern Michigan University website at <http://www.emich.edu> and the Michigan Office of the Auditor General at <http://www.audgen.michigan.gov>. In particular, report 331-0305-05 from February 2007 (“Tuition and Other Financial Obligations Assessed to Students at Michigan Public Universities”) contained relevant financial information.

The Bureau of Transportation Statistics, a bureau of the United States Department of Transportation, provides a large amount of transportation information. Publications

## Appendices

available at its website (<http://www.bts.gov>) include *Freight in America* and *Pocket Guide To Transportation 2007*. Information about the value of freight shipments is available at [http://www.bts.gov/publications/freight\\_shipments\\_in\\_america](http://www.bts.gov/publications/freight_shipments_in_america) . Detailed transportation databases are available at <http://www.transtats.bts.gov> . Form T-100 data here has been used to estimate the average length of a flight segment leaving Willow Run. Information on cargo pricing per ton mile has been taken from Northwest Airlines' web site at <http://www.nwa.com/corpinfo/>.

As described in the appendix, the indirect economic impact and the jobs impact of the activity studied has been calculated with the aid of Regional Input-Output Measuring System data. This data is calculated by the U.S. Department of Commerce's Bureau of Economic Analysis. Information is available at <http://www.bea.gov/bea/regional/rims/>.

The Federal Aviation Administration's data for passenger and cargo airports at [http://www.faa.gov/airports\\_airtraffic/airports/planning\\_capacity/passenger\\_allcargo\\_stats/](http://www.faa.gov/airports_airtraffic/airports/planning_capacity/passenger_allcargo_stats/) was used to determine total cargo tonnage. Information about passenger and cargo traffic was also provided directly by the airport. The fraction of total landed weight available for net cargo was estimated with the aid of airplane specifications available at <http://www.boeing.com/commercial/products.html>.

## **Appendix B. Quantifying Economic Impact: Methodology**

The text mentions the use of “multipliers” to determine the effect within a specific geographic area of \$1 million in spending in a specific industry. The United States Government, through the Department of Commerce and the Bureau of Economic Analysis, has conducted the Regional Input-Output Study (RIMS II). These RIMS II multipliers have been computed using 1997 national benchmark input-output and 2003 regional data. These multipliers incorporate direct and indirect effects of spending, as well as the fact that not all spending accrues as income to the local community. For this study, multipliers have been obtained for Wayne County and for the State of Michigan. The multipliers for spending in Michigan will be greater than that for Wayne County alone because some of the people benefiting (directly or indirectly) from activity at Willow Run will be residents of other counties in Michigan. Economic impact and earnings impact figures have not been adjusted for inflation.

Clearly, in the case of employment, the impact of \$1 million will depend on how high prices are at the time the \$1 million was spent. \$1 million spent in 1977 would have supported more jobs than \$1 million spent in 2007 due to the increase in prices over that 30 year period. Accordingly, the RIMS II employment multipliers, used to calculate jobs impact, must have the amount of spending adjusted for inflation. In this case, the RIMS multipliers require that the spending is calculated in “2003 dollars”, that is, in terms of its equivalent spending power with the prices prevailing in the year 2003. An economic impact study such as this must therefore adjust spending to its equivalent in “2003 dollars” in order to use the multipliers for jobs impact.

Conversion to 2003 dollars has been done using the seasonally adjusted consumer price index (CPI) for urban consumers. The CPI for calendar year 2003 had an average value of 184.0. For the WCAA Fiscal Year 2006 (the year ending September 2006), the

## Appendices

CPI had an average value (coincidentally) of 200.6. \$1 million in spending in Fiscal Year 2006, then, would be adjusted to 2003 dollars by multiplying by the ratio of 184 divided by 200.6, which means that \$917,000 would be used to calculate the jobs impact. The study presumes that annual inflation will be 2.5% each year from fiscal year 2006 through 2012, and that the 5% of the capital improvement plan slated to be spent after Fiscal Year 2011 will be spent in Fiscal Year 2012.

The RIMS II data has been used to calculate each type of impact. In terms of air transportation impact, the level of spending has been estimated using the methods described in Section II and the RIMS II multipliers for the “air transportation” industry have been used to convert these spending numbers to total economic impact. .

In terms of visitor impact, the passengers at Willow Run are presumed to be similar to non-connecting business travelers surveyed for *The Economic Impact of Detroit Metropolitan Wayne County Airport 2006*. This study found that of the passengers arriving at Detroit Metro and not simply connecting to another airport, 2.4 million (40%) are visiting Michigan while 3.6 million are Michigan residents using the airport to visit elsewhere. The study also found that the average business visitor spent \$629 while in Michigan on hotels (\$318), dining (\$164), car rentals (\$110), entertainment (\$24), and retail items (\$13). These have been allocated to the industries covered by the RIMS II data as follows:

| Spending Category                               | RIMS Industry  | NAICS Code |
|---|--|------------|
| Airline Transportation<br>(Passenger and Cargo) | Air transportation                                   | 481000     |
| Hotels  | Hotels and motels, including casino hotels           | 7211A0     |
| Dining  | Food services and drinking places                    | 722000     |
| Entertainment                                   | Other amusement, gambling, and recreation industries | 713A00     |
| Retail  | Retail Trade   | 4A0000     |



## Appendix C. Capital Improvement Plan Components

### *C.i Classification of Components*

To determine appropriate multipliers, industries must be chosen for each of the 30 elements in the 2007-2011 Capital Improvement Plan. The right column below shows the industry used to classify each of the project elements shown in the left column.

| CIP Component                                      | Industry Classification                               |
|--|---|
| <b>AIRFIELD IMPROVEMENTS</b>                       |   |
| Runway Safety Area (RSA) Improvements - Part 1     | Construction  |
| Environmental Assessment for RSA's                 | Environmental and other technical consulting services |
| RW Safety Area Improvements - Part 2               | Construction  |
| Land Acquisition for RSA Improvements (25 Acres)   | Real estate   |
| RW Safety Area Improvements - Part 3               | Construction  |
| RW Safety Area Improvements -- Part 4              | Construction  |
| Environmental Assessment for 9L/27R Extension      | Environmental and other technical consulting services |
| Extension of RW 9L/27R & Taxiway "G"               | Construction  |
| ARFF Facility                                      | Construction  |
| Construct Taxiway Parallel to Runway 5R/23L        | Construction  |
| Replace Airfield Electrical for RW 5R/23L & TW "C" | Wiring device manufacturing                           |
| Stormwater Pollution Prevention Plan               | Architectural and engineering services                |
| Extend Taxiway "B"                                 | Construction  |
| <b>TERMINAL PROJECTS</b>                           |   |
| Replace HVAC - Hangar #1                           | AC, refrigeration, and forced air heating             |
| Life/Safety Improvements in Hangar #1              | Construction  |
| Rehabilitate Third Floor of Hangar #1              | Construction  |
| Replace Windows in Admin Area of Hangar #1         | Metal window and door manufacturing                   |
| Decommission Hangar #2                             | Construction  |
| Rehabilitate Second Floor Of Hangar #1             | Construction  |

## Appendices

| CIP Component                                 | Industry Classification                                     |
|---|---|
| <b>NOISE MITIGATION PROGRAM</b>               |   |
| Part 150 Study                                | Architectural and engineering services                      |
| Noise Mitigation Program                      | Construction  |
| <b>SUPPORT FACILITIES</b>                     |   |
| Snow Removal Equipment & Maintenance Facility | Construction  |
| Upgrade Aboveground Fuel Farm Storage Tanks   | Other aircraft parts and equipment                          |
| <b>UTILITIES PROJECTS</b>                     |   |
| Replace Primary Feeder Cables -- Hangar #1    | Wiring device manufacturing                                 |
| Relocate Water Line to bypass Hangar #2       | Water, sewage and other systems                             |
| <b>OTHER PROJECTS</b>                         |   |
| Master Plan Update                            | Architectural and engineering services                      |
| Security/Badging System                       | Search, detection, and navigation instruments               |
| Airport Security Assessment                   | All other miscellaneous professional and technical services |
| Replace ARFF Fire Truck                       | Heavy duty truck manufacturing                              |
| Landscape Airport Entry Points                | Construction  |

## Appendices

### C.ii Capital Improvement Plan Details

Below are the elements of the capital improvement plan, by element and fiscal year, taken from the Fiscal Year 2007 budget of the Wayne County Airport Authority. All amounts shown are in thousands.

| CIP Component                                      | TOTAL COST | Spent to 9/06 | FY07    | FY08    | FY09    | FY10    | FY11 | FUTURE  |
|--|------------|---------------|---------|---------|---------|---------|------|---------|
| <b>AIRFIELD IMPROVEMENTS</b>                       |            |               |         |         |         |         |      |         |
| Runway Safety Area (RSA) Improvements - Part 1     | \$5,724    | \$5,574       | \$150   |         |         |         |      |         |
| Environmental Assessment for RSA's                 | \$352      | \$220         | \$132   |         |         |         |      |         |
| RW Safety Area Improvements - Part 2               | \$6,926    | \$3,027       | \$3,899 |         |         |         |      |         |
| Land Acquisition for RSA Improvements (25 Acres)   | \$1,435    | \$30          | \$1,405 |         |         |         |      |         |
| RW Safety Area Improvements - Part 3               | \$10,889   | \$131         | \$500   | \$8,000 | \$2,258 |         |      |         |
| RW Safety Area Improvements -- Part 4              | \$8,282    | \$450         | \$6,500 | \$1,332 |         |         |      |         |
| Environmental Assessment for 9L/27R Extension      | \$580      |               | \$580   |         |         |         |      |         |
| Extension of RW 9L/27R & Taxiway "G"               | \$11,200   |               |         | \$800   | \$3,400 | \$7,000 |      |         |
| ARFF Facility                                      | \$3,700    |               |         |         | \$3,700 |         |      |         |
| Construct Taxiway Parallel to Runway 5R/23L        | \$5,300    |               |         |         | \$500   | \$4,800 |      |         |
| Replace Airfield Electrical for RW 5R/23L & TW "C" | \$800      |               |         |         | \$800   |         |      |         |
| Stormwater Pollution Prevention Plan               | \$87       |               |         |         | \$87    |         |      |         |
| Extend Taxiway "B"                                 | \$3,936    |               |         |         |         |         |      | \$3,936 |
| <b>TERMINAL PROJECTS</b>                           |            |               |         |         |         |         |      |         |
| Replace HVAC - Hangar #1                           | \$2,184    |               |         | \$500   | \$1,684 |         |      |         |
| Life/Safety Improvements in Hangar #1              | \$89       |               |         | \$89    |         |         |      |         |
| Rehabilitate Third Floor of Hangar #1              | \$317      |               |         |         | \$317   |         |      |         |
| Replace Windows in Admin Area of Hangar #1         | \$277      |               |         |         | \$277   |         |      |         |
| Decommission Hangar #2                             | \$100      |               |         |         |         | \$100   |      |         |
| Rehabilitate Second Floor Of Hangar #1             | \$89       |               |         |         |         | \$89    |      |         |

## Appendices

| CIP Component                                 | TOTAL COST      | Spent to 9/06   | FY07            | FY08            | FY09            | FY10            | FY11           | FUTURE         |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| <b>NOISE MITIGATION PROGRAM</b>               |                 |                 |                 |                 |                 |                 |                |                |
| Part 150 Study                                | \$750           | \$200           | \$450           | \$100           |                 |                 |                |                |
| Noise Mitigation Program                      | \$10,000        |                 |                 | \$527           | \$3,158         | \$3,158         | \$3,157        |                |
| <b>SUPPORT FACILITIES</b>                     |                 |                 |                 |                 |                 |                 |                |                |
| Snow Removal Equipment & Maintenance Facility | \$5,000         |                 |                 | \$4,000         | \$1,000         |                 |                |                |
| Upgrade Aboveground Fuel Farm Storage Tanks   | \$658           |                 |                 |                 | \$658           |                 |                |                |
| <b>UTILITIES PROJECTS</b>                     |                 |                 |                 |                 |                 |                 |                |                |
| Replace Primary Feeder Cables -- Hangar #1    | \$72            | \$51            | \$21            |                 |                 |                 |                |                |
| Relocate Water Line to bypass Hangar #2       | \$647           |                 |                 |                 | \$647           |                 |                |                |
| <b>OTHER PROJECTS</b>                         |                 |                 |                 |                 |                 |                 |                |                |
| Master Plan Update                            | \$250           | \$235           | \$15            |                 |                 |                 |                |                |
| Security/Badging System                       | \$2,548         | \$2,532         | \$16            |                 |                 |                 |                |                |
| Airport Security Assessment                   | \$57            |                 | \$57            |                 |                 |                 |                |                |
| Replace ARFF Fire Truck                       | \$520           |                 |                 | \$520           |                 |                 |                |                |
| Landscape Airport Entry Points                | \$530           |                 |                 |                 |                 |                 |                | \$530          |
| <b>GRAND TOTAL</b>                            | <b>\$83,299</b> | <b>\$12,450</b> | <b>\$13,725</b> | <b>\$15,868</b> | <b>\$18,486</b> | <b>\$15,147</b> | <b>\$3,157</b> | <b>\$4,466</b> |

## Appendices

### *C.iii Wayne Economic Impact*

Shown below are the impacts on Wayne County of each of the elements of the 2007-2011 Capital Improvement Plan. The impacts for Fiscal Year 2007 and for the overall plan are shown. Not all components include spending in Fiscal Year 2007. Dollar amounts are in thousands.

| CIP Component                                      | 2007<br>Output | 2007<br>Income | 2007<br>Jobs | Total<br>Output | Total<br>Income |
|--|----------------|----------------|--------------|-----------------|-----------------|
| <b>AIRFIELD IMPROVEMENTS</b>                       |                |                |              |                 |                 |
| Runway Safety Area (RSA) Improvements - Part 1     | \$259          | \$53           | 1            | \$9,868         | \$2,038         |
| Environmental Assessment for RSA's                 | \$190          | \$36           | 1            | \$506           | \$95            |
| RW Safety Area Improvements - Part 2               | \$6,721        | \$1,388        | 33           | \$11,940        | \$2,466         |
| Land Acquisition for RSA Improvements (25 Acres)   | \$1,904        | \$200          | 6            | \$1,945         | \$204           |
| RW Safety Area Improvements - Part 3               | \$862          | \$178          | 4            | \$18,772        | \$3,876         |
| RW Safety Area Improvements -- Part 4              | \$11,205       | \$2,314        | 55           | \$14,277        | \$2,948         |
| Environmental Assessment for 9L/27R Extension      | \$834          | \$157          | 5            | \$834           | \$157           |
| Extension of RW 9L/27R & Taxiway "G"               |                |                |              | \$19,308        | \$3,987         |
| ARFF Facility                                      |                |                |              | \$6,378         | \$1,317         |
| Construct Taxiway Parallel to Runway 5R/23L        |                |                |              | \$9,137         | \$1,887         |
| Replace Airfield Electrical for RW 5R/23L & TW "C" |                |                |              | \$1,309         | \$202           |
| Stormwater Pollution Prevention Plan               |                |                |              | \$133           | \$32            |
| Extend Taxiway "B"                                 |                |                |              | \$6,785         | \$1,401         |
| <b>TERMINAL PROJECTS</b>                           |                |                |              |                 |                 |
| Replace HVAC - Hangar #1                           |                |                |              | \$3,562         | \$475           |
| Life/Safety Improvements in Hangar #1              |                |                |              | \$153           | \$32            |
| Rehabilitate Third Floor of Hangar #1              |                |                |              | \$546           | \$113           |
| Replace Windows in Admin Area of Hangar #1         |                |                |              | \$449           | \$69            |
| Decommission Hangar #2                             |                |                |              | \$172           | \$36            |
| Rehabilitate Second Floor Of Hangar #1             |                |                |              | \$153           | \$32            |

## Appendices

| CIP Component                                 | 2007<br>Output  | 2007<br>Income | 2007<br>Jobs | Total<br>Output  | Total<br>Income |
|---|-----------------|----------------|--------------|------------------|-----------------|
| <b>NOISE MITIGATION PROGRAM</b>               |                 |                |              |                  |                 |
| Part 150 Study                                | \$690           | \$164          | 3            | \$1,151          | \$273           |
| Noise Mitigation Program                      |                 |                |              | \$17,239         | \$3,560         |
| <b>SUPPORT FACILITIES</b>                     |                 |                |              |                  |                 |
| Snow Removal Equipment & Maintenance Facility |                 |                |              | \$8,620          | \$1,780         |
| Upgrade Aboveground Fuel Farm Storage Tanks   |                 |                |              | \$1,089          | \$193           |
| <b>UTILITIES PROJECTS</b>                     |                 |                |              |                  |                 |
| Replace Primary Feeder Cables -- Hangar #1    | \$34            | \$5            | 0            | \$118            | \$18            |
| Relocate Water Line to bypass Hangar #2       |                 |                |              | \$960            | \$148           |
| <b>OTHER PROJECTS</b>                         |                 |                |              |                  |                 |
| Master Plan Update                            | \$23            | \$5            | 0            | \$384            | \$91            |
| Security/Badging System                       | \$24            | \$5            | 0            | \$3,848          | \$755           |
| Airport Security Assessment                   | \$75            | \$10           | 0            | \$75             | \$10            |
| Replace ARFF Fire Truck                       |                 |                |              | \$1,072          | \$111           |
| Landscape Airport Entry Points                |                 |                |              | \$914            | \$189           |
| <b>GRAND TOTAL</b>                            | <b>\$22,823</b> | <b>\$4,515</b> | <b>108</b>   | <b>\$141,697</b> | <b>\$28,495</b> |

***C.iv Michigan Economic Impact***

Shown below are the impacts on Wayne County of each of the elements of the Capital Improvement Plans. The impacts for Fiscal Year 2007 and for the overall plan are shown. Not all components have an effect in Fiscal Year 2007. Dollar amounts are in thousands.

| CIP Component                                      | 2007<br>Output | 2007<br>Income | 2007<br>Jobs | Total<br>Output | Total<br>Income |
|--|----------------|----------------|--------------|-----------------|-----------------|
| <b>AIRFIELD IMPROVEMENTS</b>                       |                |                |              |                 |                 |
| Runway Safety Area (RSA) Improvements - Part 1     | \$347          | \$113          | 3            | \$13,232        | \$4,314         |
| Environmental Assessment for RSA's                 | \$249          | \$87           | 2            | \$664           | \$231           |
| RW Safety Area Improvements - Part 2               | \$9,013        | \$2,938        | 71           | \$16,011        | \$5,219         |
| Land Acquisition for RSA Improvements (25 Acres)   | \$2,199        | \$373          | 11           | \$2,246         | \$381           |
| RW Safety Area Improvements - Part 3               | \$1,156        | \$377          | 9            | \$25,172        | \$8,206         |
| RW Safety Area Improvments -- Part 4               | \$15,026       | \$4,898        | 119          | \$19,145        | \$6,241         |
| Environmental Assessment for 9L/27R Extension      | \$1,094        | \$380          | 11           | \$1,094         | \$380           |
| Extension of RW 9L/27R & Taxiway "G"               |                |                |              | \$25,891        | \$8,440         |
| ARFF Facility                                      |                |                |              | \$8,553         | \$2,788         |
| Construct Taxiway Parallel to Runway 5R/23L        |                |                |              | \$12,252        | \$3,994         |
| Replace Airfield Electrical for RW 5R/23L & TW "C" |                |                |              | \$1,646         | \$407           |
| Stormwater Pollution Prevention Plan               |                |                |              | \$175           | \$66            |
| Extend Taxiway "B"                                 |                |                |              | \$9,099         | \$2,966         |
| <b>TERMINAL PROJECTS</b>                           |                |                |              |                 |                 |
| Replace HVAC - Hangar #1                           |                |                |              | \$4,953         | \$1,136         |
| Life/Safety Improvements in Hangar #1              |                |                |              | \$206           | \$67            |
| Rehabilitate Third Floor of Hangar #1              |                |                |              | \$733           | \$239           |
| Replace Windows in Admin Area of Hangar #1         |                |                |              | \$563           | \$133           |
| Decommission Hangar #2                             |                |                |              | \$231           | \$75            |
| Rehabilitate Second Floor Of Hangar #1             |                |                |              | \$206           | \$67            |

## Appendices

| CIP Component                                 | 2007<br>Output  | 2007<br>Income | 2007<br>Jobs | Total<br>Output  | Total<br>Income |
|---|-----------------|----------------|--------------|------------------|-----------------|
| <b>NOISE MITIGATION PROGRAM</b>               |                 |                |              |                  |                 |
| Part 150 Study                                | \$904           | \$339          | 7            | \$1,507          | \$566           |
| Noise Mitigation Program                      |                 |                |              | \$23,117         | \$7,536         |
| <b>SUPPORT FACILITIES</b>                     |                 |                |              |                  |                 |
| Snow Removal Equipment & Maintenance Facility |                 |                |              | \$11,559         | \$3,768         |
| Upgrade Aboveground Fuel Farm Storage Tanks   |                 |                |              | \$1,445          | \$433           |
| <b>UTILITIES PROJECTS</b>                     |                 |                |              |                  |                 |
| Replace Primary Feeder Cables -- Hangar #1    | \$43            | \$11           | 0            | \$148            | \$37            |
| Relocate Water Line to bypass Hangar #2       |                 |                |              | \$1,204          | \$324           |
| <b>OTHER PROJECTS</b>                         |                 |                |              |                  |                 |
| Master Plan Update                            | \$30            | \$11           | 0            | \$502            | \$189           |
| Security/Badging System                       | \$32            | \$10           | 0            | \$5,018          | \$1,584         |
| Airport Security Assessment                   | \$88            | \$20           | 0            | \$88             | \$20            |
| Replace ARFF Fire Truck                       |                 |                |              | \$1,336          | \$259           |
| Landscape Airport Entry Points                |                 |                |              | \$1,225          | \$399           |
| <b>GRAND TOTAL</b>                            | <b>\$30,181</b> | <b>\$9,557</b> | <b>234</b>   | <b>\$189,221</b> | <b>\$60,464</b> |